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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,039	01/30/2004	Mitsuo Shibutani	542-012.006	7623

4955 7590 12/20/2005

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EXAMINER

WU, IVES J

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/769,039	Applicant(s) SHIBUTANI, MITSUO	
	Examiner Ives Wu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/24/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/26; 5/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- (1). **Claims 1-4** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shigeki (JP08-283313).
- (2). Shigeki (JP08-283313) discloses a dispersion stabilizer for suspension polymerization of vinyl compound (Title). The stabilizer comprises a polyvinyl alcohol of which the absorbance at 280 nm (A) in an ultraviolet absorption spectrum of a 0.1 wt% aqueous solution is 0.1 or higher,

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the absorbance at 320 nm (B) is 0.03 or higher, and the ratio of absorbance A to absorbance B is lower than 0.3 and in which the block character of residual acetic acid groups is 0.4 or higher (Constitution). In example, ethanol NaOH solution was added and it saponified at 40 °C by 20 % of PVAc concentration. After the PVA was obtained, a heat treatment for 4 hours in a 150 °C air forced oven with sodium acetate content of 0.48%. When the saponification degree was measured, it was 72 mol% ([0019]-[0020]).

As to the polyvinyl alcohol containing carbonyl groups in the **independent claim 1**, Shigeki disclose vinyl acetate including the carbonyl group C=O ([0005]).

As to the absorbances at 215 nm to be at least 0.1 in **independent claim 1**, and to be at least 0.2 in the **dependent claim 2**, in view of substantially identical polyvinyl alcohol dispersing agent and process disclosed by Shigeki and by applicant, it is the examiner's position to believe that the polyvinyl alcohol resin of Shigeki would inherently possess the absorbances of 0.1 or 0.2 at 215 nm. Since USPTO does not have proper means to conduct the experiments, the burden now is shifted to the applicant to prove otherwise.

(3). **Claims 5-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeki (JP 08-283313) in view of Tokita (US006448321B1).

As to the metal salt of aliphatic carboxylic acid in the dispersant agent in the **dependent claim 5**, Shigeki et al **does not teach** the use of metal salt of aliphatic carboxylic acid in the dispersant agent composition.

However, Tokita **teach** examples of the basic substance which may be used for the neutralization or the saponification of the melt kneaded product including alkaline metals and

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alkaline earth metals such as sodium, potassium, calcium etc.; oxide, hydroxide, and hydride of alkaline metals and alkaline earth metals such as sodium hydroxide, potassium hydroxide; and weak acid salt of alkaline metals and alkaline earth metals such as sodium acetate, potassium acetate, calcium acetate, etc. (Col. 8, line 37-58).

Therefore, it would have been obvious at time the invention was made to include the alkaline metal or alkaline earth metal salt of weak acids such as sodium acetate, calcium acetate of Tokita in the dispersant agent composition of Shigeki due to the interchangeability of metal salt of aliphatic carboxylic acid and metal hydroxides in view of their functional equivalence as basic substance, motivated by a reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

As to the preparation of dispersant agent by melt-extruding the polyvinyl alcohol resin in the **dependent claim 6**, Shigeki et al **does not teach** the use of extruder for melt-kneading.

However, Tokita **teach** a method of melt kneading to produce a melt kneaded product (Col. 4, line 21-34). It is however, preferable to use a kneader, or a multi-screw extruder (Col. 8, line 6-7).

The advantage of using melt kneading is to neutralize at least a part of fatty acid or saponify at least a part of fatty acid ester (Col. 4, line 30-34).

Therefore, it would have been obvious at time the invention was made to include the step of melt-kneading by extruder of Tokita in the process of Shigeki in order to obtain the aforementioned advantages.

As to the melt kneading temperature of 175 – 250 °C in the **dependent claim 6**, in absence of showing the criticality of the records, the optimization value for parameter of melt

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kneading temperature from 175 – 250 °C in a known process renders *prima facie* obviousness within one ordinary skill in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

(4). As to the polyvinyl alcohol resin containing carbonyl groups and having a degree of hydrolysis of 65 to 98 mol% in the **independent claim 7**, the disclosure of Shigeki is incorporated herein by reference, the most subject matters of polyvinyl alcohol with carbonyl group and hydrolysis from 65 to 98 mol% has been recited in the paragraph (2) and applicant's claim 1, and has been discussed in paragraphs (2) and (3).

As to the step of feeding to extruder and melt kneading the resin at temperature of 175 to 250 °C in the process in **independent claim 7**, the disclosure of Shigeki and Tokita is incorporated herein by reference, the most subject matters has been recited in the applicant's claim 6, and has been discussed in the paragraph (3).

As to the limitation of **dependent claim 8**, the disclosure of Shigeki is incorporated herein by reference, the most subject matters of selection from metal hydroxide or metal salts has been recited in the applicant's claim 3, and has been discussed in the paragraph (2).

As to the limitation of **dependent claim 9**, in absence of showing the criticality of the records, the optimization value for the time of extrusion in a known process renders *prima facie* obviousness within one ordinary skill in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

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As to the limitation of **dependent claim 10**, Shigeki discloses the Example showing the monomer of vinyl acetate in the reaction which further hydrolysis by NaOH, the final hydrolysis is 72 mol% ([0020]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

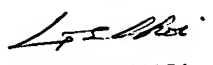
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu 

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Date: December 6, 2005


LING-SUI CHOI
PRIMARY EXAMINER